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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,820	11/04/2003	Sung Uk Moon	244927US90	4464
22850	7590	11/24/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			DEAN, RAYMOND S	
			ART UNIT	PAPER NUMBER
			2618	
			NOTIFICATION DATE	DELIVERY MODE
			11/24/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary**

<b>Application No.</b> 10/699,820	<b>Applicant(s)</b> MOON ET AL.	
<b>Examiner</b> RAYMOND S. DEAN	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 15 September 2009.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1,4,6,7,11 and 13-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1,4,6,7,11 and 13-15 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 04 November 2003 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:
1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5)  Notice of Informal Patent Application
- 6)  Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1 and 4 have been considered but are moot in view of the new ground(s) of rejection.

Laukkanen et al. (US 6,460,156), which also teaches a wireless system, teaches a transmission method determined by an interleaving length (Col. 3 lines 22 – 23, lines 28 – 32).

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 6, 11, 14 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trossen et al. (US 7,054,643) in view of Kim et al. (US 7,286,558) and in further view of Laukkanen et al. (US 6,460,156)

Regarding Claim 1, Trossen teaches a radio communication system for performing multicast communication comprising: a reception ability value collector configured to collect a reception ability value of each mobile station belonging to a specific multicast group (Cols: 3 lines 35 – 39, 4 lines 6 – 11, 5 lines 20 – 43, 6 lines 4 – 24, Table 1); a radio resource manager configured to manage available radio

Art Unit: 2618

resources (Col. 6 lines 16 – 20, efficiently managing the frequency spectrum, which is a radio resource a transmission method determiner configured to determine a transmission method of transmitting information in accordance with the collected reception ability value (Col. 5 lines 38 – 39, modulation-coding schemes); a transmission method determiner configured to determine the transmission method in accordance with the reception ability value and the available radio resources, so that a mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method (Cols. 5 lines 20 – 43, 6 lines 4 – 24, lines 39 – 41, lines 60 – 67, 7 lines 1 – 2, lines 60 – 67, 8 lines 5 – 7, lines 1 – 36); and a transmitter configured to transmit the information to each mobile station belonging to the specific multicast group using the determined transmission method without precluding a new mobile station that attempts to join the specific multicast group from joining the specific multicast group (Col. 12 lines 38 – 51).

Trossen does not teach wherein the reception ability value defines a reception buffer size of each mobile station and wherein the transmission method is determined by at least one of a hierarchical organization of the transmitted information, an amount of data transmitted, a number of codes used to code the transmitted information, an error correction method, a number of blocks, an interleaving length, and a rate matching method.

Kim, which also teaches a wireless system wherein the base station determines maximum data rate that a mobile station can support, teaches a reception ability value

Art Unit: 2618

that defines a reception buffer size of each mobile station (Col. 8 lines 31 – 34, each mobile station uses the supplemental channel to transmit data to the base station thus there will be a determination of the buffer size of each mobile, the buffer will receive data for the purpose of transmitting or receiving thus said buffer is a reception buffer).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Trossen with above feature of Kim as an alternative means for achieving the predictable result of determining the maximum data rate that a mobile station can support.

Laukkanen, which also teaches a wireless system, teaches a transmission method determined by an interleaving length (Col. 3 lines 22 – 23, lines 28 – 32).

It would have been obvious to modify the system of Trossen in view of Kim with the above technique of Laukkanen for the purpose of improving transmission efficiency, which is a well established result of interleaving and coding.

Regarding Claim 4, Trossen teaches a radio station comprising: a reception ability value collector configured to collect a reception ability value of each mobile station belonging to a specific multicast group (Figure 5, Cols: 3 lines 35 – 39, 4 lines 6 – 11, 5 lines 20 – 43, 6 lines 4 – 24, 10 lines 1 – 4, Table 1); a radio resource manager configured to manage available radio resources (Col. 6 lines 16 – 20, efficiently managing the frequency spectrum, which is a radio resource a transmission method determiner configured to determine a transmission method of transmitting information in accordance with the collected reception ability value (Col. 5 lines 38 – 39, modulation-coding schemes); a transmission method determiner configured to

Art Unit: 2618

determine the transmission method in accordance with the reception ability value and the available radio resources, so that a mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method (Cols. 5 lines 20 – 43, 6 lines 4 – 24, lines 39 – 41, lines 60 – 67, 7 lines 1 – 2, lines 60 – 67, 8 lines 5 – 7, lines 1 – 36); and a transmitter configured to transmit the information to each mobile station belonging to the specific multicast group using the determined transmission method without precluding a new mobile station that attempts to join the specific multicast group from joining the specific multicast group (Col. 12 lines 38 – 51).

Trossen does not teach wherein the reception ability value defines a reception buffer size of each mobile station and wherein the transmission method is determined by at least one of a hierarchical organization of the transmitted information, an amount of data transmitted, a number of codes used to code the transmitted information, an error correction method, a number of blocks, an interleaving length, and a rate matching method.

Kim, which also teaches a wireless system wherein the base station determines maximum data rate that a mobile station can support, teaches a reception ability value that defines a reception buffer size of each mobile station (Col. 8 lines 31 – 34, each mobile station uses the supplemental channel to transmit data to the base station thus there will be a determination of the buffer size of each mobile, the buffer will receive data for the purpose of transmitting or receiving thus said buffer is a reception buffer).

Art Unit: 2618

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Trossen with above feature of Kim as an alternative means for achieving the predictable result of determining the maximum data rate that a mobile station can support.

Laukkanen, which also teaches a wireless system, teaches a transmission method determined by an interleaving length (Col. 3 lines 22 – 23, lines 28 – 32).

It would have been obvious to modify the system of Trossen in view of Kim with the above technique of Laukkanen for the purpose of improving transmission efficiency, which is a well established result of interleaving and coding.

Regarding Claims 6, 11, Trossen in view of Kim and in further view of Laukkanen teaches all of the claimed limitations recited in Claims 4, 7. Laukkanen further teaches wherein the transmission method is determined by at least one of a method of organizing the information hierarchically, the amount of data, an interleaving length and a rate matching method (Col. 3 lines 22 – 23, lines 28 – 32).

Regarding Claims 14, 15, Trossen in view of Kim and in further view of Laukkanen teaches all of the claimed limitations recited in Claim 1, 4. Trossen further teaches wherein the transmission method determiner is configured to determine the transmission method so that the mobile station belonging to the specific multicast group equipped with a lowest reception ability can receive the information using the determined transmission method, even when at least one mobile station capable of receiving the information using a transmission method corresponding to a more robust reception ability value exists in the specific multicast group (Cols. 6 lines 16 - 20, lines

Art Unit: 2618

39 - 41, lines 60 - 67, 7 lines 1 - 2, lines 60 - 62, 8 lines 5 - 7, lines 14 - 36, See Response To Arguments set forth above).

4. Claims 7, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trossen et al. (US 7,054,643) in view of Kim et al. (US 7,286,558) in view Laukkanen et al. (US 6,460,156), as applied to Claims 4, 1 set forth above, and further in view of Agrawal et al. (US 6,748,234)

Regarding Claims 7, 13, Trossen in view of Kim and in further view of Laukkanen teaches all of the claimed limitations recited in Claims 4, 1. Trossen in view of Kim and in further view of Laukkanen does not teach wherein the radio resource is defined by at least one of transmission power, the numbers of codes, the numbers of frequencies and propagation conditions.

Agrawal, which also teaches a CDMA2000 system, teaches wherein the radio resource is defined by transmission power (Col. 3 lines 53 - 59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Trossen in view of Kim and in further view of Laukkanen with the above feature of Agrawal for the purpose of compensating for power fluctuations associated with fading as taught by Agrawal.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



Art Unit: 2618

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND S. DEAN whose telephone number is (571)272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond S Dean/  
Examiner, Art Unit 2618  
Raymond S. Dean  
November 19, 2009